

# Equipment List

## **Tools and Equipment Automotive**

**Please note:** For programs certifying under the General Service Technician Program, there is a separate Tools & Equipment List. Please refer to the General Service Technician Program section in this manual.

The tool lists are organized into three basic categories: *Hand Tools*, *General Lab/Shop Equipment*, and *Specialty Tools and Equipment*. The specialty tools section is further separated into the eight NATEF task categories. When referring to the tools and equipment list, please note the following:

1. The organization of the tool list is not intended to dictate how a program organizes its tool crib or student tool sets (i.e., which tools should be in a student set, if utilized, and which should be in the tool crib or shop area).
2. Quantities for each tool or piece of equipment are determined by the program needs; however, sufficient quantities to provide quality instruction should be on hand.
3. Programs may meet the equipment requirements by borrowing special equipment or providing for off-site instruction (e.g., in a dealership or independent repair shop). Use of borrowed or off-site equipment *must* be appropriately documented.
4. No specific brand names for tools and equipment are specified or required.
5. Although the NATEF Standards recommend that programs encourage their students to begin to build their own individual tools sets prior to entry into the industry, there is no requirement to do so. **Note:** Industry surveys indicate that most (90%) employers require that a candidate for employment provide his/her own basic hand tool set in order to be hired as an entry-level automobile technician.

# Equipment List

## **Hand Tools**

Air Blow Gun (meeting OSHA requirements)

Allen (Wrench or Socket) Set - Standard (.050" - 3/8")

Allen (Wrench or Socket) Set - Metric (2mm - 8mm, 10mm, 12mm)

Battery Post Cleaner

Battery Terminal Pliers

Battery Terminal Puller

Chisels:

Cape 5/16"

Cold 3/8", 3/4"

Chisel Holder

Claw Type Pickup Tool

Combination Wrenches:

Standard (1/4" – 1 1/4")

Metric (7mm - 24mm)

Crowfoot Wrench Set - Metric

Crowfoot Wrench Set – Standard

Ear Protection

Feeler Gauge (Blade Type)

→ .002"

→ .040"

→ .006mm

→ .070mm

Files:

→ Coarse 6" and 12"

→ Fine 6" and 12"

→ Half Round 12"

→ Round 6" and 12"

Flare Nut (tubing) Wrenches:

→ 3/8"

→ 3/4"

→ 10mm

→ 17mm

Flashlight

Fuse Puller

Fused Jumper Wire Set (with various adapters)

Hack Saw

# Equipment List

## **Hand Tools (cont'd)**

### Hammers:

- 16 oz. Ball Peen
- Brass
- Dead Blow Plastic Mallet
- Plastic Tip
- Rubber Mallet

### Inspection Mirror

### Magnetic Pickup Tool

### Pliers:

- Combination 6"
- Hose Clamp
- Locking Jaw
- Needle Nose 6"
- Side Cutting
- Slip Joint (Water Pump)

### Pry Bars:

- Rolling Head
- Straight

### Punches:

- Center
- Brass Drift
- Pin 1/8", 3/16", 1/4", 5/16 "
- Taper 3/8", 1/2", 5/8"

### Safety Glasses (meeting OSHA requirements)

### Scraper:

- Carbon 1"
- Gasket 1"

### Screwdriver - Blade Type:

- Stubby
- 6", 9", 12"
- Offset

### Screwdriver - Phillips:

- Stubby #1, #2
- 6" #1, #2
- 12" #3
- Offset #2
- Screwdriver - Impact Driver Set

# Equipment List

## **Hand Tools (cont'd)**

Screw Starter:

- Phillips
- Standard

Socket Set - 1/4" Drive:

- 1/4" - 1/2" Standard Depth
- 1/4" - 1/2" Deep
- 6mm - 12mm Standard Depth
- 6mm - 12mm Deep

Flex/Universal Type

3", 6" Extensions

Ratchet

Socket Set - 3/8" Drive:

- 5/16" - 3/4" Standard Depth (6 point)
- 3/8" - 3/4" Deep (6 point)
- 10mm - 19mm Standard Depth
- 10mm - 19mm Deep
- 3", 5", 10" Extensions

Flexhead Ratchet

Spark Plug Sockets 5/8", 13/16"

Speed Handle

Universal Joint

Flexible Socket Set 3/8" - 3/4"

Flexible Socket Set 10mm - 19mm

Socket Set - 1/2" Drive:

- 7/16" - 1 1/8" Standard Depth
- 7/16" - 1 1/8" Deep
- 10mm - 24mm Standard Depth
- 10mm - 24mm Deep
- 3", 6", 12" Extensions

Flex Handle (Breaker Bar)

Ratchet

Spark Plug Feeler Gauge (Gap Tool)

Tape Measure – Standard and Metric

Test Light (12V and self-powered)

Tire Pressure Gauge

Tire Tread Depth Gauge

# Equipment List

## **Hand Tools (cont'd)**

Torque Wrench:

- 3/8" Drive (10 - 250 lb. in.)
- 3/8" Drive (5 - 75 lb. ft.)
- 1/2" Drive (50 - 250 lb. ft.)

Torx® Set (screwdrivers and/or sockets):

- T-8 to T-60

Wire Brush

## **General Lab/Shop Equipment**

Air Chisel Set (various bits)

Air Compressor and Hoses

Air Pressure Regulator

Air Ratchet (3/8" drive)

Automotive Stethoscope (electronic recommended)

Axle Stands (Jack Stands)

Axle Support Stands (Screw Jacks)

Battery Charger

Battery/Starter/Charging System Tester

Battery Conductance Tester (recommended)

Bearing Packer (hand operated)

Belt Tension Gauge

Bench or Pedestal Grinder

Compression Tester

Coolant/Combustion Gas Detector (Recommended)

Coolant Tester

Cooling System Pressure Tester and Adapters

Creeper

Cylinder Leakage Tester

Dial Indicator with Flex Arm and Clamp Base

Digital Multimeter with various lead sets

Digital Storage Oscilloscope (DSO)

Drain Pans

Drill - 3/8" variable speed, reversible

Drill - 1/2" variable speed, reversible

Electric Heat Gun

Engine Coolant Recovery Equipment or Recycler or Coolant Disposal Contract Service

Extension Cords

Face Shields

# Equipment List

## **General Lab/Shop Equipment (cont'd)**

Fender Covers

Floor Jack (1½ Ton Minimum)

Graphing Multimeter (GMM)

Hand Held Vacuum Pump

Hoist(s)

Hood Prop

Hydraulic Press with adapters

Impact Socket Sets - 3/8" Drive (Standard and Metric)

Impact Sockets

→ 1/2" Drive (7/16" - 1 1/8")

→ 1/2" Drive (12mm – 24mm)

→ 1/2" Drive Deep (30 mm, 32 mm, 36mm)

Impact Wrench

→ 1/2" Drive

→ 3/8" Drive

Jumper Cables

Master Puller Set

Micrometer (Depth)

Micrometers - 0-1", 1-2", 2-3", 3-4", 4-5" (Outside Type)

Oil Can - Pump Type

Oil Filter Wrench

Oxy-Acetylene Torch Set

Parts Cleaning Tank and Gloves (non-solvent based cleanser suggested)

Remote Starter Switch

Scan Tool (OBDII w/CAN capability) or Personal Computer (PC) with equivalent

Interface capability

Screw Extractor Set

Seat Covers

Serpentine Belt Tensioner Tools

Snap Ring Pliers Set - external

Snap Ring Pliers Set - internal

Soldering Gun

Soldering Iron (Pencil Tip)

Spark Plug Boot Puller

Tap and Die Set

→ Standard

→ Metric

# Equipment List

## **General Lab/Shop Equipment (cont'd)**

Temperature Sensing Device  
Thread Repair Insert Kit  
Tire Inflator Chuck  
Trouble/Work Lights (Fluorescent Preferred)  
Tube Quick Disconnect Tool Set  
Tubing Bender  
Tubing Cutter/Flaring Set (Double-lap and ISO)  
Twist Drill Set  
    → 1/64" - 1/2"  
Ultra Violet Leak Detection Device (Black Light)  
Used Oil Receptacle with extension neck and funnel  
Valve Core Removing Tool  
Vernier Calipers  
    → 0 - 6"  
    → 0 - 125mm  
Wheel Chocks  
Workbenches with vises

## **Specialty Tools and Equipment**

### **Suspension & Steering**

Ball Joint Press and other Special Tools  
Brake Pedal Depressor  
Bushing Driver Set  
Coil Spring Compressor Tool  
Constant Velocity Joint (CV) Service Tools:  
    Boot Installation Tool  
    Boot Clamp Pliers or Crimping Ring  
    Chassis Ear (recommended)  
    Hand Grease Gun  
    Inner Tie Rod End Tool  
    Pitman Arm Puller  
    → Power Steering Pump Pulley Special Tool Set (appropriate for units being taught)  
    → Power Steering Pressure Gauges (recommended)  
Shock Absorber Tools  
Strut Spring Compressor Tool  
Steering Column Special Tool Set (appropriate for teaching units being utilized)  
Tie Rod Puller  
Tire Mounting Machine (rim clamp type)

# Equipment List

## **Specialty Tools And Equipment (cont'd)**

Tire Patching Tools and Supplies  
Wheel Alignment Equipment-4 wheel (including alignment tools)  
Wheel Balancer - Electronic Type  
Wheel Weight Pliers  
Tire Pressure Monitor System (TPMS) (servicing tools)

## **Brakes**

Bearing Seal and Race Driver Set  
Brake Bleeder, Pressure or Vacuum  
Brake Disc Micrometer  
Brake Drum Micrometer and Calibration Equipment  
Brake Lathe (bench with disc and drum service attachments)  
Brake Lathe (on car)  
Brake Shoe Adjusting Gauge  
Brake Spring Remover/Installer  
Brake Spring Pliers  
Brake Spoon  
Piston Retraction Set

## **Heating and Air Conditioning**

A/C Compressor Clutch Service Tools  
A/C Service Port Adapter Set  
Dye Injector  
Hygrometer  
Leak Detector (SAE Standard)  
Manifold Gauge Set or equivalent (HFC-134a)  
Refrigerant Charging Station (HFC-134a) or equivalent  
Refrigerant Identification Equipment  
Refrigerant Recovery/Recycling Machine (HFC-134a)  
Thermometer

## **Engine Performance**

Four or Five Gas Exhaust Analyzer (Five Gas Recommended)  
Fuel Injection Pressure Gauge Sets with Adapters  
Injector Pulse Tester  
Leak Detector (Smoke or Nitrogen)  
Logic Probe (suggested)  
Oxygen Sensor Socket

# Equipment List

## **Specialty Tools And Equipment (cont'd)**

Pinch-off Pliers  
Sending Unit Socket(s)  
Spark Plug Thread Tap  
Spark Tester  
Timing Advance Light  
Vacuum/Pressure Gauge

## **Automatic Transmission/Transaxle**

Differential Setup Tools (appropriate for units being taught)  
Hydraulic Pressure Gauge Set  
Front Wheel Drive Engine Support Fixture  
Transaxle Removal and Installation Equipment  
Transmission Jack(s)  
Transmission/Transaxle Flushing Equipment (recommended)  
Transmission/Transaxle Holding Fixtures  
Transmission/Transaxle Special Tool Sets (appropriate for units being utilized)

## **Manual Drive Train and Axles**

Axle Nut Socket Set (or equivalent)  
Clutch Alignment Set  
Clutch Pilot Bearing/Bushing Puller/Installer  
Differential Setup Tools (appropriate for units being taught)  
Front Wheel Drive Engine Support Fixture  
Rotating Torque Wrench (beam-type or equivalent)  
Transaxle Removal and Installation Equipment  
Special Tools for Transmissions/Transaxles (appropriate for units being taught)  
Transmission/Transaxle Holding Fixtures  
Transmission Jack(s)  
Universal Joint Tools

## **Electrical/Electronic Systems**

Connector Pick Tool Set  
Door Panel Trim Tool(s)  
Headlight Aimer or Screen  
Heat Gun (or equivalent for heat shrinking operations)  
Wire and Terminal Repair Kit

# Equipment List

## **Specialty Tools And Equipment (cont'd)**

### **Engine Repair**

Ball (Small Hole) Gauges  
Cam Bearing Driver Set (suggested)  
Camshaft Holding Tool (appropriate for units being taught)  
Cylinder Deglazer  
Dial Bore Indicator  
Antifreeze/Coolant Tester  
Engine Stands/Benches

### **Engine Repair(cont'd)**

Inside Micrometer Set:

→ 0 - 6"

→ 0 - 125mm

Oil Pressure Gauge

Outside Micrometer Set:

→ 0 - 6"

→ 0 - 125mm

Portable Crane - 1/2 Ton

Ring Compressor

Ring Expander

Ring Groove Cleaner

Straight Edge

Telescopic Gauge Set

Torque Angle Gauge

Transaxle Removal and Installation Equipment

V-Blocks

Valve Spring Compressor

Valve Spring Tester